The Port Health Services

City & County of Bristol

R C WOFINDEN, MD, MRCP, DPH, DPA

REPORT FOR 1971

Digitized by the Internet Archive
in 2017 with funding from
Wellcome Library

https://archive.org/details/b28957039

PORT
HEALTH SERVICES
ANNUAL REPORT

1971

Dr. R. C. Wofinden, Port Medical Officer of Health

This report is prepared on the lines indicated on Form Port 20, issued by the Department of Health and Social Security to Port Health Authorities

Members of the

PUBLIC HEALTH COMMITTEE

1971

Alderman C. Hebblethwaite, C.B.E. (Chairman)

Councillor Dr. R. P. Golding (Vice-Chairman)

Councillor A. B. Abrams

Councillor Mrs. L. M. Alexander

Councillor Mrs. G. C. Barrow

Councillor Rev. P. W. P. Brook

Councillor Mrs. B. L. Edwards

Councillor W. Graves, J.P.

Councillor V. J. Jackson

Councillor Mrs. I. M. Knight, M.B.E.

Councillor Mrs. F. L. Lawrence

Councillor G. H. W. Woodhouse

Preface

The legal boundaries of Bristol Port Health Authority are indicated at the commencement of this Report. In practical terms, the Authority's jurisdiction applies to the nearby seaways and anchorages used by vessels approaching Avonmouth, Portishead and the City Docks, to the lands and water areas comprising those dock complexes (except at Portishead where the high water mark constitutes the Authority's boundary) and at Lulsgate Airport in respect of arriving aircraft only. The Port of Bristol is an ancient one. Now wholly owned by the City and County of Bristol, it is the largest municipally owned dock undertaking in the United Kingdom and the only major port in the country so administered. The name "Bristol" derives from the mediaeval name of "Bricgstoc" (Place of the Bridge) and it is known that at Sea Mills on the River Avon, the Romans established the Port of Abonae two thousand years ago. The first "modern" port was established, at what are now known as the City Docks, in the early Middle Ages, and in 1239 Bristol Corporation built the Broad and Narrow Quays. Between the Bristol Channel and the City Centre lies eight miles of tidal river, and over the centuries further development took place. Sea Mills Dock, the first mercantile basin in England was built in 1712, and the Merchants Dock at Hotwells followed in 1765. The present layout of the City Docks was created in 1804-9 by the formation of the Floating Harbour, and in 1848 the Corporation assumed complete control of all River Avon docks, following this in 1884 with the acquisition of Avonmouth and Portishead docks which had been opened in 1877 and 1879 respectively. Although there has been little extension of the City and Portishead Docks since those times, Avonmouth saw further developments in 1908 and 1941 with the construction of the large Royal Edward Dock, and the Eastern Arm, and with extensive development of facilities such as oil wharves, quays, transit sheds, warehouses and granaries, and the variety of paraphernalia needed to sustain a busy port. The late 19th century saw the beginning of Britain's need to import food to sustain her newly-found industrial population, and from that time Bristol has been one of the country's principal food-importing ports. In recent years nearly £9 million have been allocated for port development, principally at Avonmouth, particularly of note being the construction of a 30,000 ton granary and the installation of new grain discharging equipment, the reconstruction of old-fashioned berths, new cold storage facilities, the provision of two new container cranes and allied handling and storage facilities, a roll-on roll-off berth, and at Chittening Estate an Inland Clearance Depot to handle unitised cargo from other ports.

Until recent years the City Docks handled large quantities annually of food stuffs from Holland, Germany, Belgium, France and the eastern European countries but at the moment a consignment of food is a rarity, containerisation having diverted imports to ports nearer the continent.

At Portishead Dock, trade for many years has been centred upon two industries only—colliers to the power station, and phosphate rock and bulk liquid phosphorus carriers to the chemical works. In the latter half of 1971 a new trade commenced—woodpulp from Scandinavia—and in six months 32 vessels discharged 32,000 tons of this commodity.

Table C (b) of Section III of the Report is compiled from figures supplied by the Port of Bristol Authority, using the National Ports Council sectional headings. Direct comparisons with figures quoted in past Reports are not therefore possible, but it will be seen that during 1971 there has been a marked increase in the amount of food imported through Bristol, significant increases in certain commodities bringing the total at 459,350·430 tonnes to double that of 1970. Imports of meat increased in 1971 by approximately 150%, tea by 116%, coffee and cocoa by 60% and 30% respectively, and sugars by 10%. Not included in the Table C (b) figures are the details of containerised foods arriving at the Inland Clearance Depot and at the numerous Chittening and Avonmouth food warehouses, the inspection of which has been deferred by the various portal authorities until arrival in Bristol. Some 15,000 tonnes of such imported foods have been dealt with during the year.

In Section XVII some comments of interest are made upon imported food, in particular regarding purity. The example of food poisoning organisms found in meat and in egg powder indicate the dangers that can exist, and the continued vigilance that is necessary. The Officers of the Authority have not been too happy regarding the Imported Food Regulations procedures relating to containerised foodstuffs, both going inland from the Port and being received into the area from other ports, and the Regulations, now in their third year, perhaps show need for early reconsideration. The visual and laboratory examination of all imported foodstuffs continues to demonstrate its value. 103 tonnes of foodstuffs were voluntarily surrendered for destruction during the year, principally due to damage caused by unsatisfactory stowage or improper handling.

1,507 inspections were made of vessels entering the Port, and it is pleasing to note that the vast majority continued to illustrate the noticeable trend of recent years towards greatly improved sanitary conditions and more comfortable, indeed luxurious, crew accommodation. Sixty ships (29 British and 31 Foreign) were found to be extensively infested with cockroaches, and remarks made in Reports in recent years regarding indifference towards verminous conditions remained valid. (Section XIII).

Section XII of the Report demonstrates the continued improvement in rodent control effected in ships nowadays. Evidence of rats was found in only 4% of the 904 vessels searched, and in only three was the infestation noted as more than very slight. Within the Docks areas, rodent control has been stringently maintained, and the cumulative preventive efforts of past years are now showing remarkably satisfactory results. (Section XVIII).

During the year, 97 ships arrived from smallpox infected areas and 97 revaccinations were performed. On September 17th the provinces of Valencia and Barcelona in Spain were declared infected areas for El Tor Cholera and 20 aircraft from these areas subsequently arriving, often late at night or in the early hours of the morning, were examined by a Medical Officer on arrival and 2,410 passengers not possessing valid vaccination certificates were put under surveillance. One case of malaria occurred on a ship during the year.

In July the practice of medical officers boarding on arrival healthy ships from smallpox infected areas was discontinued, clearance being effected by the Customs Officer. A duty list of medical officers is maintained, providing constant medical coverage on call. This system has worked extremely well and on those occasions when a medical officer has been needed no difficulties have arisen. A similar "on-call" system operates in respect of aircraft arrivals at Lulsgate Airport, and this was particularly effective during the late summer cholera outbreak in Spain.

Staff of the Port Health Authority have continued to participate in training and lecturing programes during the year, covering courses for doctors, medical and public health students, and for overseas visitors.

The Port Health Authority has, in 1971, continued to receive valuable help and co-operation from Officers of H.M. Customs, from the Immigration Department, from the staff of the Port of Bristol Authority and from various other official and commercial interests, all of which has been appreciated and which is gratefully acknowledged.

The year 1971 was marked by the end of an era in Port Health work. For many years Port Health Officers, especially doctors, boarded ships out of ordinary working hours on tidal duties, often at the expense of their own home lives. The world smallpox situation has improved to an extent where these procedures can be safely modified.

Dr. G. N. Febry, Principal Medical Officer (Port Health) since 1962, who was also responsible for the medical supervision of the National Dock Labour Board Medical Centres, left on 31st August, 1971, to enter general practice. Mr. G. J. Creech, Chief Port Health Inspector, retired on 30th June and was succeeded by Mr. T. K. Aston on 16th August.

Both Dr. Febry and Mr. Creech carried out valuable work in connection with the Port and I am especially grateful to Dr. Febry for his conscientious work in the Port Health Office.

From 1st September, Dr. A. J. Rowland, Principal Medical Officer (Epidemiology) assumed additional port health responsibilities and Dr. P. Tomlinson was promoted to Senior Departmental Medical Officer (Port). I am glad to acknowledge the work of Mr. E. M. Howells, Specialist Inspector (Port) in the preparation and collation of this report.

R. C. WOFINDEN,
Port Medical Officer of Health.

Bristol

Port Health Authority

Jurisdiction

The present limits of the Port Health Authority are defined in Article III of a Local Government Board Order dated 11th June, 1894 as follows :—

> "The jurisdiction of the said Port Sanitary Authority shall extend to so much of the said Port of Bristol as is comprised within the following lines, that is to say, a straight line drawn from the most westerly extremity of Swallow Point to the south-western extremity of the common boundary of the Ports of Newport and Bristol, and a line drawn thence and following the boundary of the Port of Bristol to its termination at the site of the Severn Tunnel, together with the waters of the said Port of Bristol within such limits, and the place or places for the time being appointed as the Customs Boarding Station or Stations for such part of the said Port, and the place or places for the time being appointed for the mooring or anchoring of ships for such part of the said Port under any Regulations for the prevention of the spread of diseases issued under the authority of the Statutes in that behalf, and all islands, bays, harbours, rivers, creeks and canals within the aforesaid limits."

NOTE

Where appropriate throughout this Report metric measures of weight are used.

One pound = 0·454 kilos

One quarter = 12·700 kilos

One cwt. = 50·802 kilos

One ton = 1,016·048 kilos
One kilo = 2 lbs. 3 oz.

One tonne = 19 cwt. 2 qrs. 20 lbs. 10 oz.
(or 1,000 kilos)

SECTION I

TABLE A

STAFF

Name of Officer	*Nature of Appointment*	*Date of appointment to Department:*	*Present post:*	*Qualification*	*Any other Appointment*
Wofinden, Dr. R. C.	Port Medical Officer of Health	29.9.47	1.2.56	M.D., B.S., M.R.C.P., D.P.H., D.P.A.	Medical Officer of Health
Skone, Dr. J. F.	Deputy Port Medical Officer of Health	1.10.59	1.10.59	M.D., B.S., D.P.H., D.C.H., D.I.H.	Deputy Medical Officer of Health
Febry, Dr. G. N.	Principal Medical Officer (Port)	20.1.58 (Until 31.8.71)	1.5.62	M.B., Ch.B., D.P.H.	—
Rowland, Dr. A. J.	Principal Medical Officer (Port)	1.12.66	1.9.71	M.B., Ch.B., D.(Obst)R.C.O.G., D.P.H.	Principal Medical Officer (Epidemiology)
Tomlinson, Dr. P.	Senior Departmental Medical Officer (Port)	20.11.57	1.9.71	M.D., B.S., D.P.H., D.T.M.&H.	—
Creech, G. J.	Chief Port Health Inspector	24.4.33 ((Retired	19.12.63 30.6.71)	M.B.E., C.St.J., F.R.S.H., M.A.P.H.I.	Chief Public Health Inspector
Aston, T. K.	Chief Port Health Inspector	16.8.71	16.8.71	M.R.S.H., M.A.P.H.I.	Chief Public Health Inspector
Downing, G. F.	Deputy Chief Port Health Inspector	13.4.64	13.4.64	A.M.I.P.H.E., M.R.S.H., M.A.P.H.I.	Deputy Chief Public Health Inspector
Howells, E. M.	Specialist Inspector (Port)	1.5.67	3.2.69	Certs of R.S.H. & P.H.I.E.J.B. & R.S.H. Meat & Other Foods	—
Fowler, C. H.	Public Health Inspector (Port)	1.9.57	1.9.57	Cert of R.S.H. & P.H.I.E.J.B.	—
Lack, W. H. G.	Public Health Inspector (Port)	23.7.62	23.7.62	Certs of R.S.H. & P.H.I.E.J.B., & R.S.H. Tropical Hygiene	—
Stinchcombe, E. N.	Public Health Inspector (Port)	2.9.57	1.6.65	Certs of R.S.H. & P.H.I.E.J.B. & R.S.H. Meat & Other Foods	—

ADDRESSES:

1) Port Medical Officer of Health,
Central Health Clinic, Tower Hill,
Bristol, BS99 7BQ
Tel. Bristol 21010 (S.T.D. 0272–21010)

2) Chief Port Health Inspector,
Port Health Office, The Docks,
Avonmouth, Bristol, BS11 9DH
Tel. Avonmouth 3038 (S.T.D. 02752–3038)

TELEGRAMS: "PORTELTH" BRISTOL.

SECTION II

TABLE B

AMOUNT OF SHIPPING ENTERING THE DISTRICT DURING THE YEAR

Ships from	*Number**	*Tonnage**	*Number inspected by the Medical Officer of Health*	*Number inspected by the Public Health Inspector*	*Number of ships reported as having or having had during the voyage infectious disease on board†*
Foreign Ports ...	1,089	2,911,408	97	1,507	33
Coastwise ...	4,252	2,001,913			
Totals	5,341	4,913,321	97	1,507	33

* Figures supplied by courtesy of the Port of Bristol Authority.

† Excluding vessels having venereal disease on board.

SECTION III

CHARACTER OF SHIPPING AND TRADE DURING THE YEAR

TABLE C(a)

PASSENGER TRAFFIC

		Seaport	*Airport*
Inwards			
	British (United Kingdom)	543	55,841
	British (Commonwealth)	57	278
	Alien	259	4,824
Outwards			
	British (United Kingdom)	85	55,658
	British (Commonwealth)	16	238
	Alien	175	4,378

PRINCIPAL PORTS from which ships arrive: Vessels arrive in the Port of Bristol from all parts of the world.

TABLE C(b)
CARGO TRAFFIC

PRINCIPAL IMPORTS

1) FOREIGN

	Tonnes
Dairy Produce	33,252·415
Meat	57,405·355
Fruit and Vegetables	22,873·025
Tea	82,673·780
Coffee	43,187·235
Cocoa	49,270·130
Sugars	143,278·415
Grain	774,587·100
Wines and Spirits	200·970
Other Foods	18,559·275
Feeding Stuffs	401,416·260
Metals and Ores	340,354·875
Petroleum	335,929·475
Chemicals/Fertilisers	400,600·200
Timber	85,837·535
Tobacco	17,899·525
Woodpulp and Paper	90,365·450
Miscellaneous Goods	162,914·605
TOTAL	3,060,605·625

2) COASTWISE (INCLUDING EIRE)

	Tonnes
Meat	4,373·635
Other Foodstuffs	4,477·165
Beer	14,955·010
Ores	37,609·810
Coal	293,295·415
Petrol	2,341,517·710
Sand	677,927·635
Other Goods	84,574·875
TOTAL	3,458,731·255

PRINCIPAL EXPORTS

1) FOREIGN

	Tonnes
Wines and Spirits	36·540
Clay and Strontia	1,286·005
Fuels	435·435
Manufactured Goods:—	
Metals	55,522·530
Machinery	1,305·290
Motor Vehicles	2,284·765
Other Goods	20,280·715
TOTAL	81,151·280

2) COASTWISE

	Tonnes
Grain	79,559·760
Animal Feeding Stuffs	5,702·270
Timber	30,078·510
Petrol	285,043·465
Sludge	257,186·790
Other Goods	81,391·835
TOTAL	738,962·630

GRAND TOTALS

PRINCIPAL IMPORTS	6,519,336·880	Tonnes
PRINCIPAL EXPORTS	820,113·910	Tonnes

SECTION IV
INLAND BARGE TRAFFIC

Number of craft entering during the year }
Tonnage of craft entering during the year } *See Note*

Places served by the Traffic:

Banbury
Barry
Bridgwater
Cardiff
Frampton
Gloucester
Lydney
Newport
Sharpness
Stourport
Swansea
Upton
Worcester

NOTE: The number of craft and tonnage is included in the Coastwise Traffic. (See Table B. Section II.)

SECTION V

WATER SUPPLY

1. Source of Supply

(a) The District
(b) Shipping
} Bristol Waterworks Company mains supply to Avonmouth, City and Portishead Docks.

2. Reports of Tests for Contamination

(a) The District

44 samples of water from premises situated within the Docks areas were submitted for bacteriological examination, together with 3 samples for chemical analysis. No adverse report was received.

(b) Shipping

	Number of ships involved	*Number of samples taken*	*Number satisfactory*	*Number unsatisfactory*	*Total*
Distribution aboard ships	110	128	121	7	146
Storage aboard ships	12	18	11	7	

In regard to the unsatisfactory reports received in respect of fourteen samples, 4 vessels were subjected to cleaning and chlorination procedures whilst at Avonmouth. Liverpool and Falmouth Port Health Authorities were requested to deal with 5 ships which had sailed for those ports, and the agents and/or owners were notified concerning those that had left Bristol for foreign ports before local action could be taken.

3. Precautions taken against Contamination of Hydrants and Hosepipes

In July samples taken from the six-hydrant main serving "T" Berth in the Royal Edward Dock indicated abnormal contamination with high coliform and plate counts reported. This main, which is less than one year old, is situated quite deeply below reinforced concrete, and is a dead-end running off the junction of two opposing mains. Tests and examinations to determine the cause of the pollution continued throughout most of the latter part of the year, involving not only the new main, but all service pipelines and premises within the surrounding areas. The main itself was placed under restricted use, but fortunately ships were able to obtain drinking water from other nearby sources. The cause of the pollution remains conjecture. Repeated chlorination, the provision of new hydrant beds and the permanent closure of one hydrant, seem to have restored the supply to normal purity, but in the somewhat nebulous circumstances attending both commencement and cessation of contamination it is clearly necessary that this main shall be under close surveillance during 1972.

77 bacteriological and 5 chemical examinations relating to hydrant/hose supplies were made during the year of which 21 bacteriological reports (all relating to "T" Berth) were adverse.

4. Water Boats

None is in service in the Port of Bristol. In an emergency, vessels at anchor in the port approaches can be supplied by tugs based at Avonmouth.

SECTION VI

THE PUBLIC HEALTH (SHIPS) REGULATIONS, 1970
THE PUBLIC HEALTH (AIRCRAFT) REGULATIONS, 1970

1. List of Infected Areas (Regulation 6)

The Infected Area List is prepared at approximately quarterly intervals, more frequently should necessity demand, and is distributed to all official and commercial interests connected with the sea and air ports.

2. **Radio Messages** (Regulations 13 and 14 (1)(a) and (2))

Incoming radio messages via all national radio stations are received through the Bristol Telegram Service and are notified direct to the Port Health Authority during normal working hours, and to Bristol Ambulance Control at other times for onward transmission to the Duty Medical Officer. When necessary, radio messages can be sent to ships approaching the Port through Portishead Radio or through Walton Bay Signal Station.

3. **Notifications otherwise than by Radio** (Regulation 14(1)(b))

A vessel not equipped with radio can avail itself of the VHF facilities afforded by the pilot, the pilot cutter or the tugs, for transmission of messages through the Port Haven Master's Signal Station.

4. **Mooring Stations** (Regulations 22 to 30)

(a) *Outer Mooring Station* — Walton Bay
(b) *Inner Mooring Station* — North Wall, Royal Edward Dock, Avonmouth.

5. **Arrangements for :**

(a) *Hospital Accommodation for infectious diseases, other than smallpox.*
Such accommodation is available at Ham Green Hospital.

(b) *Surveillance and follow-up of contacts.*
By notification to the Medical Officer of Health for the area to which the contact is proceeding.

(c) *Cleansing and disinfection of ships etc.*
Effected by Bristol Port Health Authority.

The Public Health (Ships) and (Aircraft) Regulations, 1970 came into effect on 1st January, 1971 and have been operated without any difficulty. During the year 97 ships arrived from smallpox infected areas and 97 revaccinations were performed.

In July the practice of boarding healthy ships from these areas by a Medical Officer was discontinued and the clearance was carried out by the Customs Officer. A routine duty list of Medical Officers is maintained to provide constant medical coverage. Any ship reporting sickness on board before arrival, or found to have such a case on arrival, is examined by the Duty Medical Officer. It has been found that with the kind co-operation of the Chief Preventive Officer the new system has worked satisfactorily.

On September 17th the provinces of Valencia and Barcelona were declared infected areas for cholera. 20 aircraft from these areas were examined by a Medical Officer on arrival and 2,410 passengers, not possessing valid anti cholera vaccinations, were put under surveillance before the provinces were declared free from cholera on October 12th.

SECTION VII

SMALLPOX

1. Cases and suspected cases of smallpox occurring within the district are sent to the smallpox unit at Ham Green Hospital, Pill, near Bristol.

2. Ambulance facilities are provided by the Ambulance Service of the Corporation of Bristol, which is administered by the Medical Officer of Health.

3. Two smallpox consultants are available—Dr. J. Macrae of Ham Green Hospital, Pill, near Bristol, and Dr. H. R. Cayton, Director of the Public Health Laboratory Service, Myrtle Road, Kingsdown, Bristol.

4. Facilities for the laboratory diagnosis of smallpox are available with the Public Health Laboratory Service.

The vaccinal state of all Port Health Authority and Ambulance Service staff is subject to regular review.

SECTION VIII

VENEREAL DISEASE

With the reorganisation of medical staffing of the Port Health Service in August, it was considered that the Avonmouth Dock Special Clinic could be closed down without detriment to the treatment of seamen requiring attention. With effect from 1st September, this Clinic was therefore closed and patients thereafter were referred to the main Bristol Maudlin Street Clinic.

Avonmouth Docks Special Clinic

Condition	*1967*	*1968*	*1969*	*1970*	*1971 (up to 31.8.71)*
Syphilis—Primary	6	4	2	4	1*
—Secondary	1	—	—	—	1*
—Latent	11	15	—	4	7
Gonorrhoea	49	70	43	28	30†
Non-specific Urethritis ...	66	67	43	36	27
Chancroid	3	4	4	3	—
Lymphogranuloma	7	8	3	4	—
Non-venereal disease	207	304	313	287	200
Transferred from other U.K. Clinics	11	8	4	4	3
TOTAL	361	480	412	370	269

* All cases acquired outside the United Kingdom.

† 7 cases acquired locally, 19 outside and 4 within the United Kingdom.

From September 1st to December 31st, 1971 95 seamen attended the main Bristol Special Clinic. Cards giving location and opening times of this Clinic were distributed to all ships on arrival in the Port.

SECTION IX

CASES OF NOTIFIABLE AND OTHER INFECTIOUS DISEASES ON SHIPS

No case or suspected case of cholera, plague, smallpox or yellow fever was seen at the port during the year.

TABLE D

Cases landed from Ships direct from Foreign Ports

Disease	*No. of Cases*		*Number of ships concerned*
	Passengers	*Crew*	
Gastro-enteritis ...	1	7	8
Herpes	—	1	1
Malaria	—	1	1
Scabies	—	15	15
Tonsillitis	—	6	5
Impetigo	—	1	1
Total	1	31	31

Cases which have occurred on ships from Foreign Ports but have been disposed of prior to arrival

NIL

Cases landed from other Ships

Disease	*No. of Cases*		*Number of ships concerned*
	Passengers	*Crew*	
Tonsillitis	—	3	2
Total	—	3	2

SECTION X

OBSERVATIONS ON THE OCCURRENCE OF MALARIA IN SHIPS

One case of malaria occurred on a ship during the year. Although the parasite was seen in a blood film taken at Ham Green Hospital, the precise type was still uncertain at the end of the year, a report being awaited from a specialist hospital laboratory.

SECTION XI

MEASURES TAKEN AGAINST SHIPS INFECTED WITH OR SUSPECTED FOR PLAGUE

No such infected or suspected vessel entered the Port during the year.

SECTION XII

MEASURES AGAINST RODENTS IN SHIPS FROM FOREIGN PORTS

1. **Procedure for inspection of ships for rats**

The Table which follows indicates the extensive anti-rodent measures effected in the port, normally embracing foreign-going ships, but also involving coastwise vessels as occasion demands. Conclusions regarding the present-day overall assessment of rat infestations in ships cannot be drawn from figures detailing the *number* of rats caught—one badly infested vessel alone can raise such a total quite disproportionately. Rather one must compare the number of vessels subjected to detailed inspection (905) with the number wherein *evidence,* however slight, of rats is found to exist (39). During 1971, in only 4·3% of the vessels searched was rat life found to exist, and in only 3 ships (2 foreign, 1 British) was the infestation noted as more than very slight. Regulation 19 of the Public Health (Ships) Regulations 1970 makes very adequate provision for a medical officer or other authorised officer to require deratting measures to be effected in a ship, when evidence of rats or the plague vector is noted, even though the vessel's Master may produce a valid Deratting or Exemption Certificate, and in view of these powers, and of the ever decreasing incidence of rats found on ships, it is perhaps reasonable to query the continuing need for the statutorily-required six-monthly issue of Exemption Certificates.

Details of the inspections made by the rodent control operatives are as follows:—

a) **Vessels searched**

British	353
Foreign	552
	905

b) **Evidence of rats found**

British vessels	13
Foreign vessels	26

c) **Rats recovered following trapping**

From 1 British vessel	18
From 3 Foreign vessels	7

d) **Action taken in respect of vessels showing evidence of rats :—**

Treated by Specialist Contractors	10
Treated by Port Health Authority	2
Treated by Master of Vessel	13
Forward Notices to other U.K. Ports	15

e) **Mice infestations noted in**

British vessels	6
Foreign vessels	3

All were of minor designation and were treated in 8 cases by the crew, and in 1 case by a Specialist Contractor.

2. **Arrangements for the bacteriological or pathological examination of rodents, with special reference to rodent plague, including the number of rodents sent for examination during the year.**

Such examinations are carried out by the Public Health Laboratory Service, Bristol. Of the 25 rats recovered during 1971 in ships from foreign ports 6 were so examined and were found free of pasteurella pestis .

TABLE E

RODENTS DESTROYED DURING THE YEAR IN SHIPS FROM FOREIGN PORTS

Category	*Number*
Black rats	25
Brown rats	—
Species not known	—
Sent for examination	6
Infected with plague	—
Mice	4

3. **Arrangements in the district for deratting ships, the methods used, and, if done by a commercial contractor, the name of the contractor.**

Deratting of ships within the Port of Bristol is carried out by commercial contractors, namely Rentokil Laboratories Limited, and Contra-Pest Services Limited, using methyl bromide gas, or in exceptional circumstances, sodium fluoroacetate. The use of hydrogen cyanide gas is not presently permitted, due to the apparent inability of contractors' operatives to comply with the personal-experience qualifications of the Hydrogen Cyanide (Fumigation) (Ships) Regulations. Although the Regulations are not directly enforceable by a Port health authority, it is felt nonetheless that steps must be taken to prevent their abuse, particularly when the extremely dangerous nature of this fumigant is considered.

4. **Progress in the rat-proofing of ships**

Minor rat-proofing measures have been effected upon verbal request during the year by masters of ships.

TABLE F

DERATTING CERTIFICATES AND DERATTING EXEMPTION CERTIFICATES ISSUED DURING THE YEAR FOR SHIPS FROM FOREIGN PORTS

No. of Deratting Certificates issued						
After fumigation with		*After trapping*	*After poisoning*	*Total*	*Number of Deratting Exemption Certificates issued*	*Total Certificates Issued*
HCN	*Other fumigant*					
—	—	—	—	—	91	91

Three ships during the year were found to have moderate to heavy rat infestations.

In February a heavy infestation was seen in all cargo spaces and in the forepeak and afterpeak of the Danish vessel m.v. "Petra Skou", which possessed a valid Exemption Certificate. A formal notice requiring deratting by methyl bromide was served upon the master, who whilst friendly in manner, was extremely reluctant to delay in Avonmouth. A request from the Agents to use sodium fluoroacetate was refused. Finally, the master submitted an attested certificate promising that fumigation would be carried out at his next port of call, and in view of all the circumstances obtaining at the time he was permitted to sail. It should be noted that it is impossible to *enforce* deratting—or indeed any other provision or requirement of the Public Health (Ships) Regulations—because of the "saving for ships unwilling to comply" exemption contained in Regulation 43. Although a medical officer may impose necessary precautionary conditions upon a master unwilling to comply, nonetheless the master is still permitted *to discharge cargo,* or to disembark passengers, and to take on board fuel, water and stores before compulsorily leaving the district. Possibly the "saving" quoted by Regulation 43 is far too liberal.

The British vessel m.v. "Runswick" docked in Avonmouth in October, from East African ports. Only part-cargo discharge was effected at Avonmouth, for further discharge at Belfast and completion at Glasgow. Upon primary inspection the "Runswick" was found to be very heavily infested with black rat, visible not only in the holds, but running wild on deck. Fumigation not being possible during the ship's stay in this port, all possible precautions were taken to prevent rats coming ashore, or being landed in cargo, and in this our efforts appeared to be successful. The Port Health Authorities of Belfast and Glasgow were notified, and local efforts to trap as many as possible resulted in 18 bodies being recovered. A further 30 were caught at Belfast and 44 more were found after fumigation at Glasgow. This total of 92 destroyed almost certainly does not represent more than perhaps 50% of the total rat life on board. Many bodies are frequently not recoverable after fumigation. The "Runswick" was the most heavily infested vessel seen in this port for many years, the infestation not only affecting the cargo spaces, but the crew accommodation and the bridge also.

In December, the m.v. "Jalaveera," an Indian-flag ship was found to be infested by rats. Beyond taking local precautions little could be done in Avonmouth due to the short stay and cargo discharge. The vessel sailed for Belfast, whose Port Health Authority were notified by telephone.

SECTION XIII

INSPECTION OF SHIPS FOR NUISANCES

TABLE G

INSPECTIONS AND NOTICES

a) Primary Inspections and Revisits :

Primary Inspections		*Revisits*	
British Vessels	*Foreign Vessels*	*British Vessels*	*Foreign Vessels*
459	622	234	192

Total Primary Inspections: 1,081 Total Revisits: 426

Total Inspections carried out: 1,507

b) Nature of Defects/Nuisances and Action taken :

Nature of Defects and Nuisances	*Notices Served*						*Defects/Nuisances Found*				*Results*			
	Statutory		*Informal*		*Forward*		*British*		*Foreign*		*Remedied*		*Not Remedied*	
	Br.	F.	Br.	F.	Br.	F.	*No. Found*	*No. Ships*	*No. Found*	*No. Ships*	Br.	F.	Br.	F.
Structural Wear and Tear	—	—	4	—	—	—	8	4	—	—	6	—	2	—
Dirty Conditions	—	—	3	1	—	—	4	3	1	1	4	—	—	1
Verminous Conditions	—	—	29	31	8	3	132	29	131	31	104	122	28	9
Miscellaneous	—	—	8	10	—	—	8	8	10	10	8	10	—	—
TOTALS	—	—	44	42	8	3	152	—	142	—	122	132	30	10

c) Description of Defects/Nuisances Found

	Found		*Remedied*		*Not Remedied*	
	Br.	*F.*	*Br.*	*F.*	*Br.*	*F.*
Refuse on Deck	2	7	2	7	—	—
Quayside Fouling	6	3	6	3	—	—
Defective Drainage	—	—	—	—	—	—
Defective W.C. Pans	2	—	1	—	1	—
Defective Flush Systems	2	—	1	—	1	—
Defective Wash Hand Basins	1	—	1	—	—	—
Defective Bath/Shower Fittings ...	1	—	1	—	—	—
Defective Galley Fittings	1	—	1	—	—	—
Defective Messroom Fittings	1	—	1	—	—	—
Dirty Storerooms	—	1	—	—	—	1
Dirty Messrooms	—	—	—	—	—	—
Dirty Galleys	2	—	2	—	—	—
Dirty Accommodation	2	—	2	—	—	—
Verminous Storerooms	24	25	18	24	6	1
Verminous Messrooms	28	27	22	26	6	1
Verminous Galleys	29	29	24	26	5	3
Verminous Accommodation	27	26	22	23	5	3
Verminous Alleyways	24	24	18	23	6	1
TOTALS	152	142	122	132	30	10

SECTION XIV

PUBLIC HEALTH (SHELL-FISH) REGULATIONS, 1934 and 1948

There are no shell-fish beds or layings within the jurisdiction of the Bristol Port Health Authority.

SECTION XV

MEDICAL INSPECTION OF ALIENS AND MEDICAL INSPECTION OF COMMONWEALTH IMMIGRANTS

1. List of Medical Inspectors holding Certificates of Appointment

Dr. R. C. Wofinden,	Medical Officer of Health
Dr. J. F. Skone,	Deputy Medical Officer of Health
Dr. G. N. Febry,	Principal Medical Officer (Port) (until 31.8.1971)
Dr. A. J. Rowland,	Principal Medical Officer (Epidemiology)
Dr. P. Tomlinson,	Senior Departmental Medical Officer (Port)
Dr. M. R. F. Reynolds,	Senior Departmental Medical Officer (Epidemiology)
Dr. S. Stead,	Departmental Medical Offcer
Dr. J. C. Cornwell,	Departmental Medical Offcer

2. List of other staff engaged on this work

NIL

3. Organisation of Work

A rota of medical inspectors is maintained available on call throughout the 24 hour period. Inspections of aliens and Commonwealth immigrants are effected at Lulsgate Airport and at Avonmouth, Bristol City and Portishead Docks. Two such examinations were carried out during 1971.

4(a) Nature and amount of Aliens and Commonwealth Immigrants Traffic

(b) Number of Conditional Entries of Commonwealth Immigrants

ALIENS ORDER, 1953

MEDICAL EXAMINATION OF ALIENS

(Year ended 31 December 1971)

		Seaport	*Airport*
1.	Number of arriving ships/aircraft carrying aliens	133	516
2.	Total number of arriving aliens (excluding crews)	259	4,824
3.	Total number of aliens medically examined	1	NIL

4. Reports and certificates for aliens medically examined:—

Nature of report or certificate	*Total number of reports and certificates issued*		*Aliens NOT PERMITTED to land*	
	Seaport	*Airport*	*Seaport*	*Airport*
A. Unsound mind or mentally defective ...	—	—	—	—
B(1). Undesirable for medical reasons ...	—	—	—	—
B(2). Inability to support	—	—	—	—
Likely to require medical treatment	—	—	—	—
C. Conditionally landed for further medical examination	1	—	—	—
Totals ...	1	NIL	NIL	NIL

COMMONWEALTH IMMIGRANTS ACT, 1962 & 1968

MEDICAL EXAMINATIONS

(Year ended 31 December 1971)

		Seaport	*Airport*
1.	Total number of arriving Commonwealth citizens subject to control ...	57	278
2.	Total number of Commonwealth citizens medically examined	1	Nil

3. Reports and certificates for Commonwealth citizens medically examined:—

Nature of report or certificate	*Number of reports or certificates issued*		*Number of Commonwealth citizens refused entry*	
	Seaport	*Airport*	*Seaport*	*Airport*
A. Suffering from mental disorder ...	—	—	—	—
B(1). Undesirable for medical reasons ...	1	—	1	—
B(2). Likely to require major medical treatment	—	—	—	—
Totals ...	1	NIL	1	NIL

5. **Accommodation for Medical Inspection and Examination**
Suitable accommodation is available at all the docks comprising the seaport and also at Lulsgate Airport.

SECTION XVI

ARRANGEMENTS FOR THE BURIAL ON SHORE OF PERSONS WHO HAVE DIED ON BOARD SHIP FROM INFECTIOUS DISEASE

The Council of the City and County of Bristol is also the Port Health Authority for the district. The ambulance and mortuary facilities of the City are therefore available for the conveyance and detention prior to shore burial of persons who have died on board ship from infectious disease.

SECTION XVII

IMPORTED FOODS

In 1971 459,350·430 tonnes of foodstuffs (excluding grain at 775,000·000 tonnes) entered the Port of Bristol. 546 samples were taken for bacteriological examination and 630 for chemical analysis, exhaustive checks being made for food poisoning organisms, metallic contamination, the addition of preservatives, colouring matters, emulsifiers and stabilisers, for mercury and arsenic, and for the presence of insecticides, pesticides and fungicides. The now prevalent—perhaps too prevalent—use of chemicals in foodstuffs for so many purposes—to obtain longer shelf life, to retard decomposition, to improve the appearance of a product—is controlled in the United Kingdom by a mass of food standards legislation which is quite apart from further legislation relating *not* to purity but to *compositional* requirements of foodstuffs. Although when legislation is appropriate, attention is paid at the time of import to statutory compositional requirements, offences in this connection are not truly committed until the time of sale, when they constitute fraud upon the purchaser. It is even doubtful whether food inspection, in its true sense, involving as it does a well-trained and experienced inspectorate, should ever embrace sampling of this nature. The true purpose of food inspection must always be to determine the purity of a product. It matters little if a canned meat product, required to contain 60% of meat, actually contains 90% meat; what is important is that the meat product shall be pure and wholesome, and for this reason imported food inspection must always primarily concern itself with the *fitness* for human consumption not only of ready-for-use canned, bottled and packeted foods, but of the raw materials from which such a variety of foodstuffs are manufactured in this country. In general terms overseas producers are well aware of those additives to foods which are permitted here, and transgressions of our requirements are nowadays minimal and not of particular significance. However food handling and preparation overseas is not always what it should be and there is not always an awareness of why hygiene is necessary, so that the dangers of food-poisoning remain a prime consideration. Organoleptic and laboratory examinations nowadays so often produce no adverse report, that a feeling of false security can be so easily engendered. Then suddenly a product which for years has been most satisfactory will produce food-poisoning organisms, and the value of exhaustive, repetitive sampling becomes more than manifest.

Some brief indication of the troubles associated with imported food are illustrated in the following incidents:—

a) In January 550 cartons x 24 x 15 oz. tins of Canned Green Beans were received from South Africa. Visual examination showed that the consignment appeared to be of old stock, and that determined efforts had been made to eradicate evidence of its ancient origin.

The can ends had been buffed with an abrasive to remove rust marks, but with little effect, as new areas of rust had quickly materialised. Code markings stamped in the can lids had been attacked by rust, and evidence of leakage was noted. The permitted lead content of this product is 2 p.p.m., by weight, but chemical analyses revealed lead up to 10·7 p.p.m. clearly confirming the original "old stock" opinion. The consignment was detained, and in due course was surrendered by the importer and destroyed.

Deliberate attempts to mask age and deterioration are not unknown but are rare.

b) Frozen Irish Chicken Meat submitted for bacteriological examination was found to be contaminated by staphylococcus aureus. Fortunately the phage type pattern was non-pathogenic, but the importers, a large nationally-known firm of food producers, took immediate action to ensure improvements in the hygienic handling methods of their Irish suppliers.

c) Hen Egg Albumen has been imported for many years from the United States. Used in cake and confectionery manufacture, it is not always subjected during such manufacture to heat treatment which would be adequate to destroy any food poisoning organisms therein. Potentially therefore, this product could be very hazardous to health, and its purity before use must not be in doubt. There has been little cause for concern over the years, as routine sampling has shown, until on two occasions during 1971, in March and May, food poisoning organisms were found present in the albumen, various pathogenic strains of salmonellae being isolated. The findings caused no little consternation amongst the importers and producers and following representations made by them to the Authority, it was agreed that 154 cartons should be returned to America for producer's examination. From a small consignment of 50 cartons in May, sampling indicated the pathogenic salmonella saint paul in one carton only, which was destroyed locally.

d) Large consignments of West African Cocoa Beans, in sacks, are not infrequently found to be part-affected by condensation within a ship's hold, causing extensive mould contamination. Not all of a bag's contents are affected, and competent firms specialising in reconditioning can salvage substantial amounts of sound beans. During the year several tons of beans so affected were permitted to go for reconditioning, under guarantee that they would be subject to the jurisdiction of the public health authority of the area in which the firm's premises were located.

Consignments of tea, coffee, ground nuts etc., are also dealt with in this manner. It must be emphasised that the Authority's officers will not permit such reconditioning unless they are satisfied by diligent enquiry that the firm is completely reliable and has competent staff and adequate equipment. On occasions when damage is too extensive to permit salvaging, permission is sometimes granted for the commodity to go for animal feeding stuff or industrial usage, and the same conditions of release apply.

e) French Boneless Beef, for manufacturing purposes, or for making into frozen ready-meal packs, has in recent times been somewhat suspect, particularly from a food poisoning point of view. Such meat if fully cooked and canned will be harmless, but contaminated meat used as frozen ready meals obviously presents a danger to health. It is therefore customary for samples to be taken for bacteriological examination at the port of entry, and/or by the receiving local authority when containerised traffic is involved. In November, Southampton Port Health Authority notified that samples taken from French boneless beef consigned to a Bristol Cold Store had been found to have salmonella contamination. It was somewhat difficult initially to trace the consignment, as the French driver had delivered it to the wrong store, but in due course it was found and further sampling commenced. 18 samples were drawn from the various batches making up the total of 334 x 30 kilos cartons and not until the final 3 samples were taken was salmonella java isolated, confirming the Southampton findings. Eventually, release was granted in respect of 333 cartons, one contaminated carton being destroyed.

It was very disconcerting to find in the same Cold Store at the time when the Southampton consignment was being so meticulously examined, a further consignment of French Boneless Beef which had entered the country at a small South Coast Port and which had not been subjected to other than a most cursory examination there, and had not been bacteriologically checked. The absence of a proper inspection had not deterred that port health authority from failing to notify Bristol Public Health Department in accordance with the requirements of the Imported Food Regulations, and it is weak links in the chain such as this which cause those parts of the Regulations dealing with containerisation to be so criticised at the present time, and which lead the experienced larger ports to feel that the high standards set over the years are now being set aside in favour of expediency. The Department of Health was verbally notified of this incident. Local sampling of this latter consignment was therefore effected, fortunately with no adverse results.

f) Ergot is a condition found in wheat and rye which is known to be dangerous to humans if consumed in quantity and above certain accepted, although statutorily undefined, tolerances. In October a consignment of 2,540 tonnes United States Wheat was found to be infested by ergots at a rate of 0·07% w/w, which was considered to be excessive. However, this particular type of wheat is not used alone, but in order to produce a suitable milling wheat has to be admixed with, and diluted by, softer wheats. Additionally routine screening, cleaning, washing and drying remove most pollutants from wheat so treated. By arrangements with the Mill manager, check samples were taken at the various stages of production, and the final analysis showed an ergot contamination rate reduction from 0·07% w/w to 0·009% w/w. Various official research organisations were contacted, and it was finally decided that 0·009% w/w was acceptable, and the use of the American wheat, adequately treated and diluted was therefore permitted. The absence of standards—agreed tolerances—remains a problem however, and at the end of the year the matter remained with the Department of Health for eventual advice and guidance.

Mention has been briefly made earlier of how the inspection of imported foods in containers can go wrong, through the lack of diligence, but nowadays even though all due diligence may be observed by portal authorities, there still remains a quite serious deficiency of inspectorial procedures and laboratory examinations associated with small urban or rural authorities, who in the past may have never had to worry about foodstuffs at all, and who, because a large food warehouse or inward clearance depot is established in their area, suddenly find that they, the *local authority,* are responsible for inspection, and the enforcement provisions of the Imported Food Regulations. In the past no doubt the county health authority or the weights and measures department have controlled the sale of foodstuffs in these areas. Now, the need to assess the purity of *large* quantities of foods from all over the world is thrust upon the local inland inspector. How great is his task? Perhaps inexperienced in this specialised work, and very importantly without the services of a readily-available public analyst and bacteriologist, and with his local authority not having provided funds (nor particularly willing to) for laboratory examination, it is not unreasonable to imagine that standards are perforce lowered. However, what may or may not happen in small inland areas still depends on adequate notification by the portal authority, one of whom when taken to task by this Authority explained that his Treasurer thought telephone calls (as required by the Regulations) were too costly, and must therefore not be made—so they were not made, and doubtless many deliveries were lost to the appropriate inland inspector.

Containerisation is designed to speed up the carriage of cargo, by sea or air, and to minimise damage. Whilst the commercial interests may thus benefit, the continuance of the present most unsatisfactory inspection procedures must lead to greater risk to the consumer. A sense of responsibility and of duty must replace expediency, and however disagreeable may be the thought, funds, staff and improved communications must be provided, if the high standards of which we in the United Kingdom are so proud are to be maintained.

Country of Origin	*Principal Commodities Sampled*	*Number of Samples Taken*	
		Bacteriological	*Chemical*
Australia	Canned Meats	—	2
Belgium	Canned Vegetables	1	1
Brazil	Canned Meats, Nuts	3	4
Canada	Canned Fish	2	4
Ceylon	Tea, Desiccated Coconut	128	7
Cyprus	Vegetables, Canned Fruit Juices	—	12
Eire	Canned Meats	7	4
France	Boneless Fresh Meat	36	—
Holland	Canned Meats	17	18
Hungary	Canned Meats	3	1
India	Canned Fish, Canned and Fresh Vegetables, Nuts ...	36	77
Israel	Canned Fruit, Canned Fruit Juices	1	28
Italy	Canned Vegetables	—	15
Japan	Canned Fruit, Canned Fish	80	101
Kenya	Canned Meats, Canned Fruit	31	37
Malaya	Canned Fruit	—	20
New Zealand	Canned Meats, Fresh Fruit	9	12
South Africa	Canned Meat, Canned Fish, Canned Fruit, Canned Vegetables	43	189
Spain	Canned Fish, Canned Fruit, Fresh Fruit	2	11
Pakistan	Canned Fish	2	3
U.S.A.	Nuts, Egg Albumen, Grain	99	6
Other European	Canned Meats	12	2
Other African	Canned Meat, Canned Fish, Canned Fruit	33	74
Other American	Canned Fish, Canned Fruit	1	2
		546	630
	GRAND TOTAL	1,176	

FOODSTUFFS DESTROYED

Description	*Principal Causes of Destruction*	*Weight in tonnes*
Frozen Meat	Salmonella contamination; hydraulic fluid contamination; salt water contamination	1·319
Canned Fruits	Crushed, burst, leaking, rusty cans; metallic contamination	27·329
Other Canned Foods	Crushed, rusted, leaking cans; metallic contamination	8·672
Fruit and Vegetables in Bulk	Decomposing; crushed and dirty; rodent and insect contamination; overheated	13·369
Tea	Damp and mouldy; dock water contamination; dirt and debris contamination; oil and grease contamination	4·196
Other Foods (Bagged and Cartoned Commodities)	Wet and mould damaged; dirt contamination; foul dock water damage; diesel oil contamination; insect infestations	48·330
	TOTAL	103·215

SECTION XVIII

OTHER MATTERS

1. Rodent Control within Dock Areas

RODENTS DESTROYED IN PREMISES, SHEDS, QUAYS, RAILWAY AREAS ETC. DURING 1971

	Black Rats		*Brown Rats*		*Mice*	
Avonmouth Docks	310	(544)	32	(37)	98	(67)
City Docks	—	(—)	1	(3)	—	(—)
Chittening Estate	—	(—)	—	(—)	—	(—)
TOTALS	310	(544)	33	(40)	98	(67)

(N.B. Figures for 1970 are shewn in parenthesis above.)

Number of rats submitted for laboratory examination and found free of pasteurella pestis: 57.

The year has shewn a slight increase in the number of mice caught in premises within the Avonmouth dock area. Somewhat perturbing is the fact that numerous small infestations have been reported, involving areas far distant from each other. Fortunately no significant damage to food-stuffs has been seen, but the increased incidence gives rise to some concern and every effort is being made to eradicate completely each infestation as it occurs. In an industrial area this is not always an easy matter.

Rats caught in 1971 (310 black and 32 brown) at Avonmouth shew a very marked decrease from the 1970 returns (544 black and 37 brown). These low figures are really quite remarkable when one considers the large area of Bristol's dockland, and the variety of industries and of land features therein, and creditably reflect the diligence of the Authority's pest control operators over many years. Whilst it is to be hoped that the incidence of rats will continue to decrease, so many factors can change the picture almost overnight, but the large-scale repressive measures continuously in operation must perforce minimise the likelihood of any significant increase.

The six animal feeding stuff/flour mills in Avonmouth Docks have given no cause for concern during the year. All are serviced by the Authority's rodent control staff based in the Docks, and routine, regular treatments over a period of several years are now shewing very worthwhile results.

90 inspections were made of the 75 barges which ply within the City and Avonmouth Docks. Towards the end of the year 2 barges were found to have slight infestations of rattus norvegicus, and mice were discovered in a tobacco barge. All were treated and the infestations eradicated.

The port's floating grain elevators, always potential rodent residences, were found to be free of rats and mice throughout 1971.

2. Dock Hygiene and Sanitation

In general this has been satisfactory, although the present-day absence of the ubiquitous "light-duty" man of the past has frequently meant delay in clearing up the aftermath of cargo movements. Nowadays the odd-job man has disappeared from the docks' scene, and a feature of the new labour arrangements is that special gangs have to be ordered for what are often quite small tasks. Such gangs are not available of course, when the Port is busy, but it is fair to say that all levels of the Dock management co-operate extremely well with the Authority's inspectorate, and in due course sanitary order is restored.

Conditions at the now little-used City Docks have been satisfactory, nor has there been cause for complaint within the Chittening Warehouse complex.

3. Canteens within the Docks

2 new canteens opened in 1971. Both—one at the Shell Company's Depot, the other in the new Port of Bristol Authority's administrative block—are designed and equipped to a high standard. The new P.B.A. canteen was sadly deficient in the provision of intervening ventilated spaces when built, but the necessary amending works have now been attended to.

All other existing canteens have operated to a satisfactory standard. The food vending machines within the docks have been well maintained, and the unsold foods therein changed regularly and frequently.

4. Clean Air Acts, 1956/1968

The Dark Smoke (Permitted Periods) (Vessels) Regulations 1958

1971 has been a "good" year for smoke. Total contraventions, all of a minor nature, numbered but 9 and all were remedied upon request. Engine-room negligence remains the major cause of black smoke emissions. Only one mechanical defect was noted, and dark/black smoke troubles in a natural-draught steamship were eliminated by a change from fuel oil to diesel.

5. Animal Feeding Stuffs

Details of the sampling carried out in 1971 are contained in the following Table.

Number of samples taken—323.

Number of samples failing to satisfy the requirements of the Fertilisers and Feeding Stuffs Act, 1926 and Regulations made thereunder—35.

Constituent	*Excess*	*Deficiency*
Protein	16 samples	3 samples
Oil	7 samples	2 samples
Fibre	1 sample	2 samples
Additives	—	6 samples
Protein equivalent of Urea	—	1 sample
TOTALS	24 samples	14 samples

(Note—3 samples were each found to contain two unsatisfactory constituents.)

Sixteen samples were found to contain protein in excess of the permissible upper limit, but on the advice of the Regional Officer of the Ministry of Agriculture, Fisheries and Food that excess protein is not considered by his Ministry as being prejudicial to the purchaser, no further action was taken, other than to inform the manufacturers accordingly. In all but one of the instances when excesses or deficiences were reported, repeat sampling was effected, with satisfactory results. Further action will be taken on the one outstanding adverse result early in 1972.

At the end of December, the Avonmouth mill of a major animal feeding stuff manufacturer closed, the business being transferred to a rural area. There are now five mills remaining within th Dock area, each with a very considerable annual output. In total, over one million tons of animal feeding stuffs are produced in Avonmouth each year.

P&S DEPT. V628